AMENDMENTS

In the Claims:

This Listing of Claims replaces all prior versions, and listings, of the claims in this application.

Listing of Claims:

1. (Currently Amended) A system for retrieving motion picture, comprising:

a motion picture segmentation means for segmenting motion picture temporally;

a motion picture shape descriptor abstracting means for abstracting a motion picture shape descriptor from the segmented motion picture; and

a motion picture metadata storing means for storing the motion picture shape descriptor as metadata~~.~~,

wherein the motion picture shape descriptor is abstracted by using one or combination of a mean shape descriptor, a variance shape descriptor, a standard deviation shape descriptor and a differential shape descriptor,

wherein the mean shape descriptor is obtained based on an Equation as:

$sd^{av}(m) = (\sum_{i=1\ to\ n} sd_i(m))/n,$

wherein $sd_i = \{sd_i(1), sd_i(2), sd_i(3), ..., sd_i(m)\}.$

2. (Original) The system as recited in claim 1, wherein the motion picture shape descriptor abstracting means includes:

a shape abstracting means for abstracting shape information corresponding to one object from the segmented motion picture;

a shape vector descriptor abstracting means for abstracting shape vector descriptor sequence from the shape information; and

a statistical shape vector descriptor abstracting means for abstracting a motion picture shape descriptor from the shape vector descriptor sequence.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The system as recited in claim [[3]] 1, wherein the variance shape descriptor is obtained based on an Equation as:

$sd^{var}(m) = (\Sigma_{i=1\ to\ n} (sd_i(m)- sd^{av}(m))^2)/n/(n-1)$,

wherein $sd^{av}(m)=(\Sigma_{i=1\ to\ n} sd_i(m))/n$, and $sd_i = \{sd_i(1), sd_i(2), sd_i(3),..., sd_i(m)\}$.

6. (Currently Amended) The system as recited in claim [[3]] 1, wherein the standard deviation shape descriptor is obtained based on an Equation as:

$sd^{std}(m) = sqrt(\Sigma_{i=1\ to\ n} (sd_i(m)- sd^{av}(m))2)/n/(n-1)$,

wherein $sd^{av}(m)=(\Sigma_{i=1\ to\ n} sd_i(m))/n$, and $sd_i(m) = \{sd_i(1), sd_i(2), sd_i(3),..., sd_i(m)\}$.

7. (Currently Amended) The system as recited in claim [[3]] 1, wherein the differential shape descriptor is obtained based on an Equation as:

$dsd_r = (sd_{r+1} * p_{r+1})(sd_r * p_r)$,

wherein sd_r denotes a shape descriptor abstracted from the m^{th} shape information s_r;

r is in the range of $0 < r < n$; and

p_r denotes a weight of the r^{th} shape descriptor sd_r.

8. (Currently Amended) A system for retrieving motion picture, comprising:

a first motion picture shape descriptor abstracting means for abstracting a first motion picture shape descriptors for motion picture;

a motion picture storing means for storing the motion picture;

a motion picture shape descriptor metadata storing means for storing the first motion picture shape descriptor; and

a motion picture retrieving means for calculating the similarity between the first motion picture shape descriptor abstracted from the motion picture shape descriptor abstracting means and a second motion picture shape descriptor outputted from the motion picture shape descriptor metadata storing means, arranging the motion picture shape descriptor in the order of similarity from small to large, and outputting similar motion pictures~~.~~,

wherein the first motion picture shape descriptor and the second motion picture shape descriptor are abstracted by using one or combination of a mean shape descriptor, a variance shape descriptor, a standard deviation shape descriptor and a differential shape descriptor,

wherein the mean shape descriptor is obtained based on an Equation as:

$sd^{mv}(m) = (\sum_{i=1 \text{ to } n} sd_i(m))/n$,

wherein $sd_i = \{sd_i(1), sd_i(2), sd_i(3), \ldots, sd_i(m)\}$.

9. (Original) The system as recited in claim 8, wherein the motion picture retrieving means includes:

a second motion picture shape descriptor abstracting means for abstracting motion picture shape descriptor from the motion picture outputted from the motion picture storing means and storing the abstracted motion picture shape descriptor in the motion picture shape descriptor metadata storing means;

a motion picture shape descriptor similarity computing means for calculating the similarity between a first motion picture shape descriptor outputted from the first motion picture shape descriptor abstracting means and the second motion picture shape descriptor outputted from the motion picture shape descriptor metadata storing means; and

a distance-based classification means for classifying the similarity outputted from the motion picture shape descriptor similarity computing means and outputting the similar motion pictures.

10. (Original) The system as recited in claim 9, wherein the distance-based classification means classifies the similarity in the order of distance from close to far.

11. (Original) The system as recited in claim 9, wherein the motion picture shape descriptor similarity computing means computes the similarity based on an Euclidian distance between two input information vectors, or a sum of absolute differences.

12. (Currently Amended) A method for abstracting a motion picture shape descriptor having statistical characteristics of still picture shape descriptors to be applied to a motion picture shape descriptor abstracting apparatus, the method comprising the steps of:

a) segmenting a motion picture temporally and abstracting shape information corresponding to one object from the temporally segmented motion picture;

b) abstracting a motion picture shape descriptor, which is a statistical shape vector descriptor, from the shape information; ~~and~~

c) storing the motion picture shape descriptor in a motion picture metadata storing means~~,~~;

d) abstracting a shape vector descriptor sequence from the abstracted shape information of motion picture in order to abstract the motion picture shape descriptor; and

e) abstracting a motion picture shape descriptor, which is a statistical shape vector descriptor, from the shape vector descriptor sequence,

wherein the motion picture shape descriptor, which is a statistical shape vector

descriptor of the step e), can be obtained based on an Equation as:

$sd^{av}(m) = (\sum_{i=1 \text{ to } n} sd_i(m))/n,$

wherein $sd_i = \{sd_i(1), sd_i(2), sd_i(3), \ldots, sd_i(m)\}$.

13. (Cancelled)

14. (Cancelled)

15. (Currently Amended) The method as recited in claim [[13]] 12, wherein the motion picture shape descriptor can be obtained based on an Equation as:

$sd^{var}(m) = (\sum_{i=1 \text{ to } n} (sd_i(m) - sd^{av}(m))^2)/n/(n-1),$

wherein $sd^{av}(m) = (\sum_{i=1 \text{ to } n} sd_i(m))/n$, and $sd_i = \{sd_i(1), sd_i(2), sd_i(3), \ldots, sd_i(m)\}$.

16. (Currently Amended) The method as recited in claim [[13]] 12, wherein the motion picture shape descriptor can be obtained based on an Equation as:

$sd^{std}(m) = sqrt(\sum_{i=1 \text{ to } n} (sd_i(m) - sd^{av}(m))2)/(n-1),$

wherein $sd^{av}(m) = (\sum_{i=1 \text{ to } n} sd_i(m))/n$, and $sd_i(m) = \{sd_i(1), sd_i(2), sd_i(3), \ldots, sd_i(m)\}$.

17. (Currently Amended) The method as recited in claim [[13]] 12, wherein the motion picture shape descriptor can be obtained based on an Equation as:

$dsd_r = (sd_{r+1} * p_{r+1})(sd_r * p_r),$

wherein sdr denotes a shape descriptor abstracted from the m^{th} shape information s_r;

r is in the range of $0 < r < n$; and

p_r denotes a weight of the r^{th} shape descriptor sd_r.

18. (Previously Presented) A computer-based recording medium encoded with (stored thereon, embedded with, or embodying), causing a computer to execute a method for abstracting motion picture shape descriptors, the method comprising the steps of:

a) segmenting a motion picture temporally and abstracting shape information corresponding to one object from the temporally segmented motion picture;

b) abstracting a motion picture shape descriptor, which is a statistical shape vector descriptor, from the shape information; and

c) storing the motion picture shape descriptor as metadata in a motion picture metadata storing means,

wherein the program is implemented in a motion picture shape descriptor abstracting apparatus provided with a processor.

19. (New) The system as recited in claim 8, wherein the variance shape descriptor is obtained based on an Equation as:

$sd^{var}(m) = (\sum_{i=1 \text{ to } n} (sd_i(m) - sd^{av}(m))^2)/n/(n-1)$,

wherein $sd^{av}(m)=(\sum_{i=1 \text{ to } n} sd_i(m))/n$, **and** $sd_i = \{sd_i(1), sd_i(2), sd_i(3),..., sd_i(m)\}$.

20. (New) The system as recited in claim 8, wherein the standard deviation shape descriptor is obtained based on an Equation as:

$sd^{std}(m) = sqrt(\sum_{i=1 \text{ to } n} (sd_i(m) - sd^{av}(m))2)/n/(n-1)$,

wherein $sd^{av}(m)=(\sum_{i=1 \text{ to } n} sd_i(m))/n$, **and** $sd_i(m) = \{sd_i(1), sd_i(2), sd_i(3),..., sd_i(m)\}$.

21. (New) The system as recited in claim 8, wherein the differential shape descriptor is obtained based on an Equation as:

$dsd_r = (sd_{r+1} * p_{r+1})(sd_r * p_r)$,

wherein sd_r denotes a shape descriptor abstracted from the m^{th} shape information s_r;

r is in the range of $0 < r < n$; and

p_r denotes a weight of the r^{th} shape descriptor sd_r.